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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,935	08/31/2005	Herwig Schottenberger	121640-04369547	1297
43569	7590	10/18/2007		
MAYER, BROWN, ROWE & MAW LLP			EXAMINER	
71 South Wacker			LEE, RIP A	
Chicago, IL 60606			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			10/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/518,935

Applicant(s)

SCHOTTENBERGER ET AL.

Examiner

Rip A. Lee

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1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 1-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 08-31-2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The title compound on page 12, line 26 of the specification appears incorrect. The compound should be identified as *bis*{1,3-bis[3,5-*bis*(trifluoromethyl)phenyl]triazendo}zinc(II). Please make appropriate corrections.

### *Claim Objections*

2. Claims 1-19 are objected to because of the following informalities: Please use an article to modify the subject of each claim, *i.e.*, for claim 1, write "A catalyst composition..." Appropriate corrections are required.

3. Claim 1 is objected to because of the following informalities: It is not clear what embodiments are contemplated where integers *q* and *r* are equal to zero. Elucidation and/or appropriate correction is required.

4. Claim 3 is objected to because of the following informalities: integer *y* would not appear to equal zero, otherwise, there is no ligand present. Elucidation and/or appropriate corrections are required.

5. Claim 3 is objected to because of the following informalities: since integer *z*<sub>2</sub> refers to a "core building" ligand, it would not appear to be zero, otherwise, there is no core. Elucidation and/or appropriate corrections are required.

6. Claim 7 is objected to because of the following informalities: Please insert the word "is" between the two ligand structures. Appropriate correction is required.

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7. Claims 11 and 13 are objected to because of the following informalities: Please change upper case letters to lower case letters (except for abbreviations such as HDPE, *etc.*). Appropriate corrections are required.

8. Claim 15 is objected to because of the following informalities: Since claim 15 is an independent claim, all symbols need to be defined without reference to some other claim. Appropriate correction is required.

9. Claim 15 is objected to because of the following informalities: In step (iv), please replace preposition “for” with the word “with.” Appropriate correction is required.

10. Claim 16 is objected to because of the following informalities: Since claim 16 is an independent claim, all symbols need to be defined without reference to some other claim. Appropriate correction is required.

11. Claim 17 is objected to because of the following informalities: Since claim 17 is an independent claim, all symbols need to be defined without reference to some other claim. Appropriate correction is required.

12. Claim 17 is objected to because of the following informalities: In line 1 of the claim, replace “formual” with “formula.” Appropriate correction is required.

13. Claim 17 is objected to because of the following informalities: The ligand structure that appears the last line of the claim needs to be replaced with the ligand structure in formula (VI). That is, replace  $(R^1_qA^1-X-A^2R^2_r)$  with  $(R^5N-N-NR^6)$ . Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

14. Claims 1-15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The test for enablement is whether a person skilled in the art can make and use the invention without undue experimentation (see MPEP § 2164.01). That cited portion of the MPEP references *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988), in which a number of factors were set forth as requiring consideration “when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is undue.” Among the factors mentioned were the amount of direction provided by the inventor, the existence of working examples, and the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Questions of enablement are evaluated against the claimed subject matter. And, although not everything necessary to practice the claimed invention need be disclosed, what is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. In particular, the scope of enablement must only bear “reasonable correlation” to the scope of the claims.

It is the examiner's position, evidenced by the discussion below, that due to inadequacies with respect to, at least, the above-mentioned factors, the cited claims lack enablement.

The claims are drawn to a catalyst composition comprising a non- or weakly coordinating anion (hereafter, “anion”) comprising at least one ligand ( $R^1_q A^1-X-A^2 R^2_r$ ) in which  $A^1$  and  $A^2$  are defined as N, O, P, S, and C. The examiner has turned to the specification for guidance and has found that the only working examples of non- or weakly coordinating anion are those in which ligand ( $R^1_q A^1-X-A^2 R^2_r$ ) represents a triazenido ( $R^1_q N-N-NR^2_r$ ) ligand. The experimental section shows how to prepare inventive the anion, and the skilled artisan learns that ligation to M proceeds *via* alkane elimination from a MR precursor in which R is alkyl. Although examples in

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which ligands containing heteroatoms, P, O, and S are not disclosed, one of ordinary skill in the art would find that the working example bears reasonable correlation to embodiments of the invention in which the ligand contains these heteroatoms. One of ordinary skill in the art would be able to practice without undue experimentation the invention since one would reasonably expect the alkane elimination pathway to work with the latter embodiments. One would not reasonably expect similar means to ligate a carbon fragment to M. In light of insufficient disclosure as to what sort of ligand framework (note bridging group X is not defined adequately) in which either of A<sup>1</sup> or A<sup>2</sup> is carbon is contemplated, and in view of absence of disclosure that would enable the skilled artisan to make the compound containing said noncoordinating anion, it is deemed that one of ordinary skill in the art would require more than undue experimentation to practice this invention for embodiments in which either of A<sup>1</sup> or A<sup>2</sup> is carbon. Therefore, it is concluded that scope of enablement does not bear “reasonable correlation” to the scope of the claims.

Dependent claims 2-14 are subsumed under the rejection.

### ***Claim Rejections - 35 USC § 112***

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (i) First, claims 1 and 9 are particularly indefinite because they describe a catalyst that is activated by the non- or weakly coordinating anion. A catalyst is an active species that has been activated and is reactive toward olefins. It is not clear why a catalyst is activated with said anion. Use of “catalyst precursor,” “pre-catalyst,” or “metallocene complex” is suggested. (ii) Secondly, the salt containing the non-/weakly coordinating anion is activating, not just the anion itself. (iii) Thirdly, use of the term “can be activated” renders the claim indefinite because it is not certain whether the compound containing said non-/weakly coordinating anion is actually performing any activation. Amendment to “is activated” is suggested. (iv) Fourth, it is

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not clear which portion of the anion is necessarily bound to M, especially where heteroalkyl/heteroaryl groups are present.

Dependent claims 2-8 and 10-14 are subsumed under the rejection.

17. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understood what is meant by the term "core building ligand." The examiner has turned to the specification for guidance, and the specification and working examples are devoid of indication of what constitutes a "core building ligand."

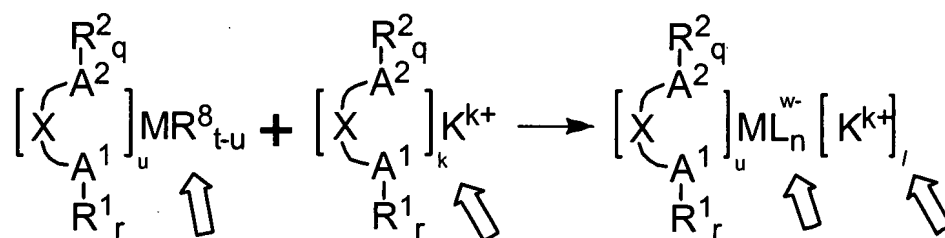
18. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not entirely understood how a compound of the lithium salt of the non-/weakly coordinating anion is capable of activation in the context of generating a vacant site at a metal center for olefin polymerization.

19. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 10 provides for the use of a catalyst composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 10 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

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20. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For clarity, the reaction scheme described in step (iii) is depicted below. It is not entirely clear from the claim language how the  $R^8$  groups of precursor  $M(R_q^1 A^1 - X - A^2 R_r^2)_u R_{t-u}^8$  become ligands  $L$  in the product,  $[K]^{k+} [L_n M(R_q^1 A^1 - X - A^2 R_r^2)_m]^{w-}$ . In addition, there is no correlation between integers  $k$  and  $l$ .



### Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

22. Claims 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Cherian *et al.* (*Water, Air, and Soil Pollution*, 1991).

Cherian *et al.* discloses the zinc complex  $[L_2Zn]^{2-}$  where  $L$  represents a substituted 1,3-diphenyltriazenato ligand. The ligand is in acid form, however, in alkaline medium, the condition in which spectrophotometry is conducted, the complex is in salt form  $[C][L_2Zn]^{2-}$ , where  $C$  is a cation. The compound meets the claimed species since there is no indication that the negative formal charge resides at the metal center.



23. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Leman *et al.* (*J. Chem. Soc., Dalton Trans.*, 1992).

Leman *et al.* discloses the indate complexes,  $[C][(Ph_2N_3)_2InCl_2]$ , where  $Ph_2N_3$  is a 1,3-diphenyltriazenato ligand and cation C is  $Me_4N$  and PPN.

24. Claim 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by King *et al.* (*Inorg. Chem.*, 1975).

King *et al.* discloses the series of group 6 "ate" complexes  $[Me_4N][(Ph_2N_3)M(CO)_4]$  where M = Cr, Mo, W.

25. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruiz *et al.* (*J. Chem. Soc., Dalton Trans.*, 2001).

Ruiz *et al.* discloses a series of group 10 complexes  $[Bu_4N][M(Ph_2N_3)(C_6F_5)_2]$  and  $[Bu_4N][M(Ph_2N_3)(C_6F_5)_2Cl_2]$  where M = Pd, Pt.

26. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanchez *et al.* (*Helv. Chim. Acta*, 1997).

Sanchez *et al.* discloses a series of nickelate complexes  $[Bu_4N][Ni(Ar_2N_3)(C_6F_5)_2]$  and where Ar = Ph, p-tolyl, and p-anisyl.

27. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cotton *et al.* (*Inorg. Chim. Acta*, 1996).

Cotton *et al.* discloses the ferrate complex  $[Li(THF)_4][Fe(Ph_2N_3)_3]$ .

28. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Braddock-Wilking *et al.* (*J. Am. Chem. Soc.*, 1995).

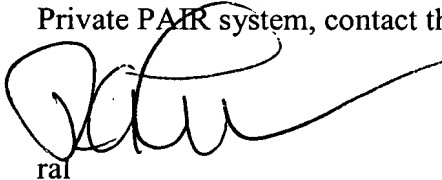
Braddock-Wilking *et al.* discloses the radical anions  $[Li(THF)_4][Al(Ph_2N_3)_3]$  and  $[PPN][Al(Ph_2N_3)_3]$ .

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



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October 13, 2007